

C. JAMES & ASSOCIATES, INC.

“Protecting America’s Resources”

441 CALLE CORAZON

OCEANSIDE, CALIFORNIA 92057

(760) 722-0050

FAX (760) 722-0150

March 14, 2006

Mr. James Strozier
Orange County Health Care Agency
Department of Environmental Health
Hazardous Materials Management Section
1241 E. Dyer Road, Suite 120
Santa Ana, CA 92705-5611

Subject: Report: Soil Vapor Survey at Metro Car Wash, 2950 Harbor Boulevard, Costa Mesa, California (OCHCA Case #98UT006)

Mr. Strozier:

1.0 INTRODUCTION

C. James & Associates, Inc. (CJA) has prepared the following Report detailing a soil vapor survey on the adjacent Jabsco property (1485 Dale Way). This report has been prepared in accordance with our Work Plan (and addendum) dated January 20 and February 13, 2006. In addition the work conducted is in response to the Orange County Health Care Agency (OCHCA) correspondence dated December 6 & 23, 2005 and February 2 and 16, 2006.

2.0 SUMMARY OF ACTIVITIES

2.1 Soil Vapor Survey

On March 3, 2006, CJA attempted to sample two (SV1 and SV2) of the seven soil vapor probes (depth of 5 feet below grade) on the adjacent property in the locations indicated on **Plate 2**. Due to soil saturation (rainfall and irrigation), water was aspirated from the probes rather than soil vapor. These probes were abandoned and the remaining four soil vapor probes (SV8 through SV11) were conducted inside the existing building (**Plate 2**).

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The results of the soil gas survey for soil vapor probes SV8 through SV11 indicate that all targeted compounds were non-detectable at the detection limits provided by the mobile laboratory. Laboratory analyses is presented as **Appendix B**. The soil gas survey was conducted in accordance with the Cal EPA Department of Toxic Substances Control's December 15, 2004 Interim Final Guidance for the Evaluation and Mitigation of Subsurface Vapor Intrusion to Indoor Air and the LARWQCB's January 23, 2003 Advisory - Active Soil Gas Investigations.

2.1.1 Manually Driven Probes

Manually driven soil vapor probes are constructed of 0.625 inch outside diameter steel and equipped with a hardened steel tip. The probes are nominally 5 feet long and can be threaded together to reach a depth of ten feet below ground surface. An inert 1/8 inch nylaflo tube was threaded down the center of the probe and connected to a sampling port just above the tip. This internal sample tubing design eliminates any contact between the sample port and the gas sample.

The probe was driven into the ground by an electric rotary hammer. Once inserted to the desired depth, the probe was rotated approximately 3 turns to open the tip and exposes the vapor sampling ports. This design prevents clogging of the sampling ports and cross-contamination from the soils during insertion.

2.1.2 Hydraulically Driven Probes

Hydraulically-driven soil vapor probes are constructed of wither 1.25 or 1.5 inch outside diameter steel and equipped with a hardened drop-off steel tip. The probes are nominally 4 feet long and threaded together to reach multiple depths. The probe was driven into the surface with a strataprobe direct-push system. Once inserted to the desired depth, the probe was retracted slightly to expose the vapor sampling port. A small diameter inert tubing was then inserted through the center of the rod and threaded into a gas tight fitting just above the tip. After the sample was obtained the tubing

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was removed and the probe rod advanced to the next sampling depth or removed. This design prevents clogging of the sampling port and cross-contamination from the soils during insertion.

2.1.2 Surface Seals

The probe rod was sealed at the surface with granular and hydrated bentonite for a minimum of 20 minutes before sampling.

2.2 Soil Gas Sampling

Soil vapor was withdrawn from the end of the inert nylaflow tubing that runs from the sampling tip to the surface using a 20 to 60 cubic centimeter (cc) syringe or gas tight canister (summa) connected via an on-off valve. The probe tip and sampling tubing was nominally purged of three to five internal volumes, or based upon a pre-determined purge volume established by a purge volume test described below. A sample of in-situ soil vapor was then withdrawn and immediately transferred to the mobile lab for analysis within minutes of collection. The use of small calibrated syringes allowed for careful monitoring of purge and sample volumes. This procedure ensures adequate sample flow is obtained without excessive pumping of air or introduction of surface air into the sample.

2.2.1 Purge Volume Test

A site specific purge volume test was conducted at the beginning of the soil gas survey to purge ambient air from the sampling system. Three different volumes were sampled (nominally 1, 3, 7 purge volumes) and analyzed immediately to determine the volume amount with the highest concentration. Therefore, the optimum purge volume is achieved and used during the entire site investigation.

2.2.2 Use of Tracer Compound to Ensure Probe Seal Integrity

A tracer compound, difluoroethane, was used to test for leaks around the probe barrel at the ground

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surface and in the sampling system. The tracer was placed around the base of the probe barrel and at the top of the probe barrel during sample collection. If the tracer is detected per CA-EPA advisory specifications, another sample is collected.

2.2.3 Sample Flow Rate

Sample collection was timed so that the flow rate did not exceed 200 ml/per minute. This was accomplished by withdrawing the plunger on the 60 cc syringe at a constant rate for 20 seconds.

2.2.4 Summa Canister

Summa canisters were connected to the end of the nylaflow tubing to the same three way valve used with the syringe. A choke was placed on the canister to ensure that the flow rate is no more than 200 ml/ per minute into the summa canister.

2.3 Soil Gas Analytical

Soil vapor samples were tested on site with a mobile laboratory per EPA Method 8260B for Vapor Analysis.

Target Compounds

	Vapor ug/L
Benzene	0.1
Ethylbenzene	1.0
m,p-Xylene	2.0
o-Xylene	1.0
Toluene	1.0
Diisopropyl ether (DIPE)	1.0
Ethyl-butyl- ether (ETBE)	1.0
MTBE	1.0
t-Amyl-methyl ether (TAME)	1.0
t-Butanol (TBA)	5.0

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Additional Site Specific Compound

naphtalene	1.0
TPH gas	500

Leak Check Compound

1,1 difluoroethane	10
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Analytical Methodology and Quality Control Procedures are presented as **Appendix A**.

Due to the lack of contaminants in the soil vapor extracted under the existing building (SV8 through SV11) C. James & Associates, Inc. recommends no further assessment at this location. Should you need additional information regarding this Report please contact us at your convenience.

Sincerely,
C. James & Associates, Inc.



Michael Anselmo
Engineering Manager



Daniel Oliver
Registered Geologist #4781



cc: Mr. Malcolm Cobrink, Metro California Business Enterprises
Ms. Nancy Olson-Martin, Santa Ana Regional Water Quality Control Board

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REFERENCES

- a) Correspondence from the County of Orange, Health Care Agency "Notification to Initiate Corrective Action at the Site of An Unauthorized Underground Storage Tank Release" dated January 26, 1998.
- b) Correspondence from the County of Orange, Health Care Agency "Notice of Responsibility" dated January 26, 1998.
- c) Report prepared by MJA Consulting, Inc. "Underground Tank Removal" dated February 17, 1998
- d) Correspondence from the County of Orange, Health Care Agency, Review and Exceptions to MJA Consulting, Inc. "Underground Tank Removal Report", dated May 7, 1998
- e) Correspondence from MJA Consulting, Inc. to the County of Orange, Health Care Agency responding to exceptions in May 7, 1998 letter (dated May 18, 1998)
- f) September 4, 1998 - Quarterly Report prepared by MJA Consulting, Inc. to the County of Orange, Health Care Agency
- g) October 1, 1998 - Work Plan prepared by MJA Consulting, Inc to the County of Orange, Health Care Agency
- h) November 4, 1998 - Correspondence from the County of Orange, Health Care Agency approving Work Plan with exceptions
- i) November 5, 1998 - Correspondence from MJA Consulting, Inc. to the County of Orange, Health Care Agency responding to exceptions.
- j) November 23, 1998 - Correspondence from the County of Orange, Health Care Agency approving response to exceptions
- k) Permits for groundwater monitoring wells obtained from the County of Orange, County of Orange dated December 3, 1998
- l) January 27, 1999 - Report prepared by MJA Consulting, Inc. to the County of Orange

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Health Care Agency "Subsurface Environmental and Groundwater Monitoring Well Installation"

- m) April 5, 1999 - Correspondence from the County of Orange, Health Care Agency approving Work Plan acknowledging January 27, 1999 report and requesting a Work Plan for additional assessment.
- n) April 5, 1999 - Report prepared by MJA Consulting, Inc. to the County of Orange Health Care Agency "Groundwater Monitoring Well Sampling and Gradient Assessment - 1st Quarter 1999".
- o) April 16, 1999 - Work Plan prepared by MJA Consulting, Inc. to the County of Orange, Health Care Agency "Work Plan to Conduct Additional Site Assessment"
- p) May 19, 1999 - Correspondence from the County of Orange, Health Care Agency approving Work Plan acknowledging April 16, 1999 Work Plan requesting a revised Site Plan
- q) June 18, 1999 - Correspondence from MJA Consulting, Inc. to the County of Orange, Health Care Agency confirming the installation of monitoring wells MW-10 through MW-14
- r) June 22, 1999 - Correspondence from the County of Orange, Health Care Agency to Metro Car Wash confirming the installation of monitoring wells MW-10 through MW-14
- s) July 14, 1999 - Report prepared by MJA Consulting, Inc. to the County of Orange Health Care Agency "2nd Quarter Report - Subsurface Environmental Site Assessment and Groundwater Monitoring Well Installation"
- t) September 20, 1999 - Correspondence from the County of Orange, Health Care Agency to Metro Car Wash requesting additional site assessment east of the subject location and approval to conduct aquifer pump and vapor pilot testing.
- u) October 29, 1999 - Report prepared by MJA Consulting, Inc. to the County of Orange Health Care Agency "3rd Quarter Report - Groundwater Monitoring, Gradient Assessment and Work Plan for Additional Site Assessment"

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- v) December 14, 1999 - Correspondence from the County of Orange, Health Care Agency to Metro Car Wash requesting additional information regarding the 3rd Quarter 1999 Report
- w) January 15, 2000 - Report prepared by MJA Consulting, Inc. to the County of Orange Health Care Agency "4th Quarter Report 1999 - Groundwater Monitoring, Gradient Assessment and Work Plan for Additional Site Assessment"
- x) February 14, 2000 - Correspondence from the County of Orange, Health Care Agency approving Work Plan dated January 15, 2000 with considerations.
- y) March 24, 2000 - Report prepared by MJA Consulting, Inc. to the County of Orange Health Care Agency "1st Quarter Report 2000 - Groundwater Monitoring, Gradient Assessment and Work Plan for Additional Site Assessment"
- z) June 2, 2000 - Report prepared by MJA Consulting, Inc. to the County of Orange Health Care Agency "2nd Quarter Report 2000 - Groundwater Monitoring Well Sampling and Gradient Assessment"
- aa) June 14, 2000 - Report prepared by MJA Consulting, Inc. to the County of Orange Health Care Agency "Subsurface Environmental Site Assessment and Groundwater Monitoring Well Installation"
- bb) July 19, 2000 - Report prepared by MJA Consulting, Inc. to the County of Orange Health Care Agency "Vapor Extraction and Groundwater Field Testing"
- cc) August 24, 2000 - Correspondence from the County of Orange, Health Care Agency approving Pilot Tests for Air Sparging
- dd) September 13, 2000 - Report prepared by C. James & Associates, Inc. to the County of Orange Health Care Agency "3rd Quarter Report 2000 - Groundwater Monitoring Well Sampling and Gradient Assessment"
- ee) November 2, 2000 - Report prepared by C. James & Associates, Inc. to the County of Orange Health Care Agency "Positive Pressure Air Sparging Testing"
- ff) December 11, 2000 - Report prepared by C. James & Associates, Inc. to the County of Orange Health Care Agency "4th Quarter Report 2000 - Groundwater Monitoring Well Sampling and Gradient Assessment"

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- gg) December 28, 2001 - Correspondence from the County of Orange, Health Care Agency requesting BTEX and MTBE analysis by EPA 8021B
- hh) January 17, 2001 - Report prepared by C. James & Associates, Inc. to the County of Orange Health Care Agency "Interim Remedial Action Plan"
- ii) February 1, 2001 - Correspondence from the County of Orange, Health Care Agency approving Interim Remedial Action Plan with considerations.
- jj) March 19, 2001 - Report prepared by C. James & Associates, Inc. to the County of Orange Health Care Agency "1st Quarter Report 2001 - Groundwater Monitoring Well Sampling and Gradient Assessment"
- kk) July 11, 2001 - Report prepared by C. James & Associates, Inc. to the County of Orange Health Care Agency "2nd Quarter Report 2001 - Groundwater Monitoring Well Sampling and Gradient Assessment"
- ll) October 8, 2001 - Report prepared by C. James & Associates, Inc. to the County of Orange Health Care Agency "3rd Quarter Report 2001 - Groundwater Monitoring Well Sampling and Gradient Assessment"
- mm) October 22, 2001 - Correspondence from the County of Orange, Health Care Agency requesting clarification of 3rd Quarter 2001 Report (10/08/01)
- nn) November 2, 2001 - Addendum to Report prepared by C. James & Associates, Inc. to the County of Orange Health Care Agency "3rd Quarter Report 2001 - Groundwater Monitoring Well Sampling and Gradient Assessment"
- oo) December 21, 2001 - Report prepared by C. James & Associates, Inc. to the County of Orange Health Care Agency "4th Quarter Report 2001 - Groundwater Monitoring Well Sampling and Gradient Assessment"
- pp) March 28, 2002 - Report prepared by C. James & Associates, Inc. to the County of Orange Health Care Agency "1st Quarter Report 2002 - Groundwater Monitoring Well Sampling and Gradient Assessment"
- qq) June 3, 2002 - Report prepared by C. James & Associates, Inc. to the County of Orange Health Care Agency "2nd Quarter Report 2002 - Groundwater Monitoring Well Sampling and Gradient Assessment"

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- rr) September 9, 2002 - Report prepared by C. James & Associates, Inc. to the County of Orange Health Care Agency "3rd Quarter Report 2002 - "Groundwater Sampling, Gradient Assessment and Soil Vapor Extraction System Monitoring"
- ss) January 6, 2003 - Report prepared by C. James & Associates, Inc. to the County of Orange Health Care Agency "4th Quarter Report 2002 - "Groundwater Sampling, Gradient Assessment and Soil Vapor Extraction System Monitoring"
- tt) March 31, 2003 - Report prepared by C. James & Associates, Inc. to the County of Orange Health Care Agency "1st Quarter Report 2003 - "Groundwater Sampling, Gradient Assessment and Soil Vapor Extraction System Monitoring"
- uu) April 14, 2003 - Correspondence from the County of Orange, Health Care Agency: semiannual monitoring for specified wells
- vv) July 21, 2003 - Report prepared by C. James & Associates, Inc. to the County of Orange Health Care Agency "2nd Quarter Report 2003 - "Groundwater Sampling, Gradient Assessment and Soil Vapor Extraction System Monitoring"
- ww) September 24, 2003 - Report prepared by C. James & Associates, Inc. to the County of Orange Health Care Agency "3rd Quarter Report 2003 - "Groundwater Sampling, Gradient Assessment and Soil Vapor Extraction System Monitoring"
- xx) January 12, 2004 - Report prepared by C. James & Associates, Inc. to the County of Orange Health Care Agency "4th Quarter Report 2003 - "Groundwater Sampling, Gradient Assessment and Soil Vapor Extraction System Monitoring"
- yy) April 12, 2004 - Report prepared by C. James & Associates, Inc. to the County of Orange Health Care Agency "1st Quarter Report 2004 - "Groundwater Sampling, Gradient Assessment and Soil Vapor Extraction System Monitoring"
- zz) May 27, 2004 - Correspondence from the County of Orange, Health Care Agency: Semiannual Monitoring (2nd and 4th Quarters).
- aaa) July 6, 2004 - Report prepared by C. James & Associates, Inc. to the County of Orange Health Care Agency "2nd Quarter Report 2004 - "Groundwater Sampling, Gradient Assessment and Soil Vapor Extraction System Monitoring"

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- bbb) October 4, 2004 - Report prepared by C. James & Associates, Inc. to the County of Orange Health Care Agency "3rd Quarter Report 2004 - " Soil Vapor Extraction System Monitoring"
- ccc) December 13, 2004 - Correspondence from the County of Orange, Health Care Agency: Pulsing of SVE System during the 1st Quarter of 2005
- ddd) January 5, 2005 - Report prepared by C. James & Associates, Inc. to the County of Orange Health Care Agency "4th Quarter Report 2004 - " Soil Vapor Extraction System Monitoring"
- eee) April 19, 2005 - Work Plan to Conduct Soil Verification Borings, prepared by C. James & Associates, Inc.
- fff) May 11, 2005 - Addendum to Work Plan (April 19, 2005) prepared by C. James & Associates, Inc.
- ggg) May 16, 2005 - Correspondence from the County of Orange, Health Care Agency - Approval of Work Plan with Considerations
- hhh) June 13, 2005 - Addendum to Work Plan (April 19, 2005) prepared by C. James & Associates, Inc.
- iii) June 21, 2005 - Correspondence from the County of Orange, Health Care Agency - Approval of Work Plan and Addendums
- jjj) September 16, 2005 - Report - Soil Verification Borings prepared by C. James & Associates, Inc.
- kkk) September 23, 2005 - Correspondence from the Orange County Health Care Agency - Draft Closure Summary Submission to Responsible Parties and Landowners
- lll) December 8, 2005 - Correspondence from OCHCA to Diane Smith - Closure of Orange County Oversight Program Case - Requests soil vapor survey
- mmm) December 23, 2005 - Correspondence from OCHCA to Metro - Requests soil vapor survey
- nnn) January 20, 2006 - Work Plan for Soil Vapor Survey prepared by C. James &

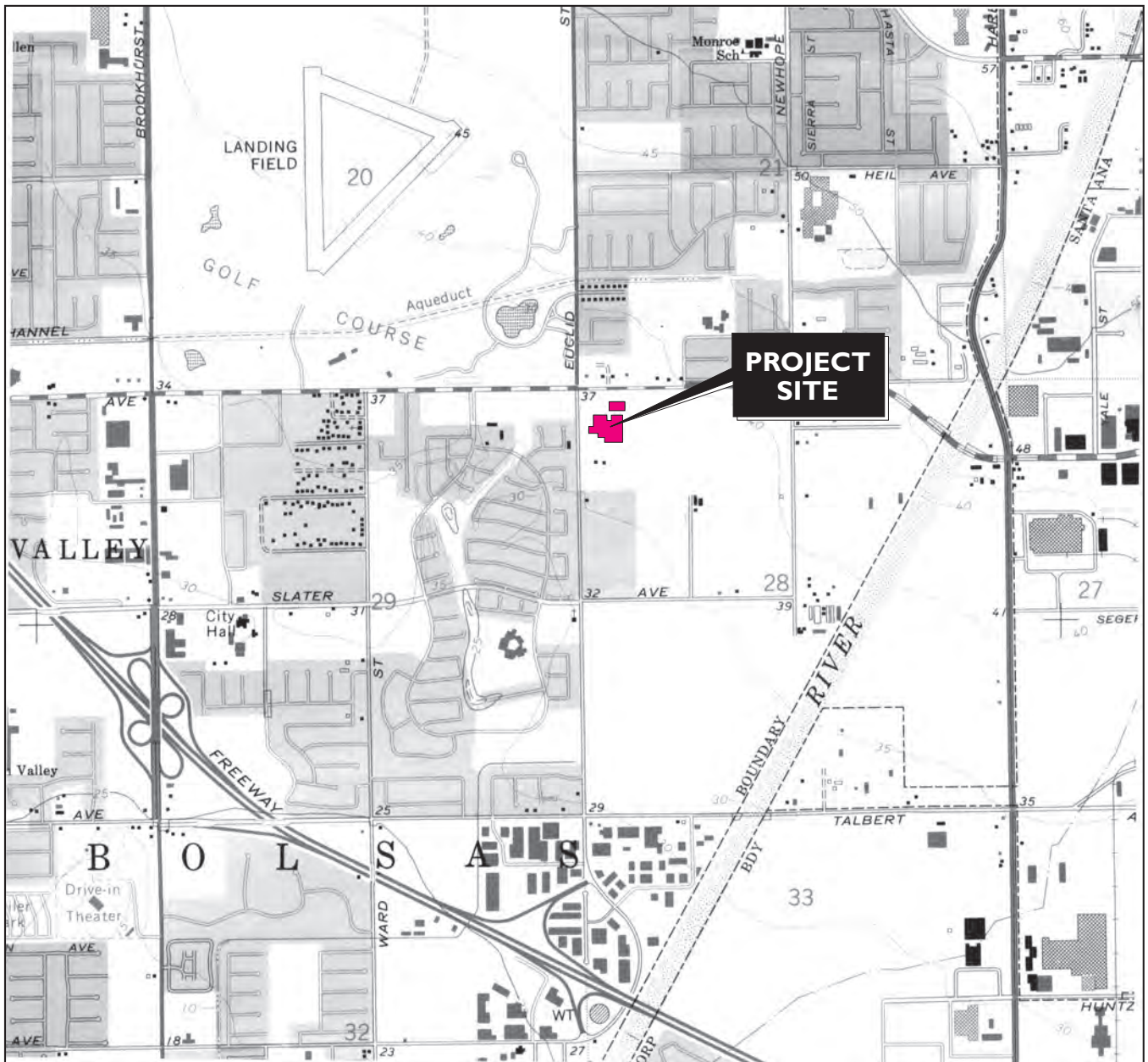
March 14, 2006

Metro California Business Enterprises
OCHCA Case #98UT006

Associates, Inc.

- ooo) February 2, 2006 - Correspondence from OCHCA to Metro - Approval of Work Plan with conditions
- ppp) February 13, 2006 - Addendum to Work Plan for Soil Vapor Survey prepared by C. James & Associates, Inc.
- qqq) February 16, 2006 - Correspondence from OCHCA to Metro - Approval of Addendum to Work Plan

PLATES



Notes:

- 1) The base map was taken from USGS 7.5 Minute Newport Beach, California Topographic Quadrangle, 1965, photorevised 1972.
- 2) All locations and dimensions are approximate.

0 1000 2000 3000

Approximate Graphic Scale:
One Inch Equals 2000 Feet



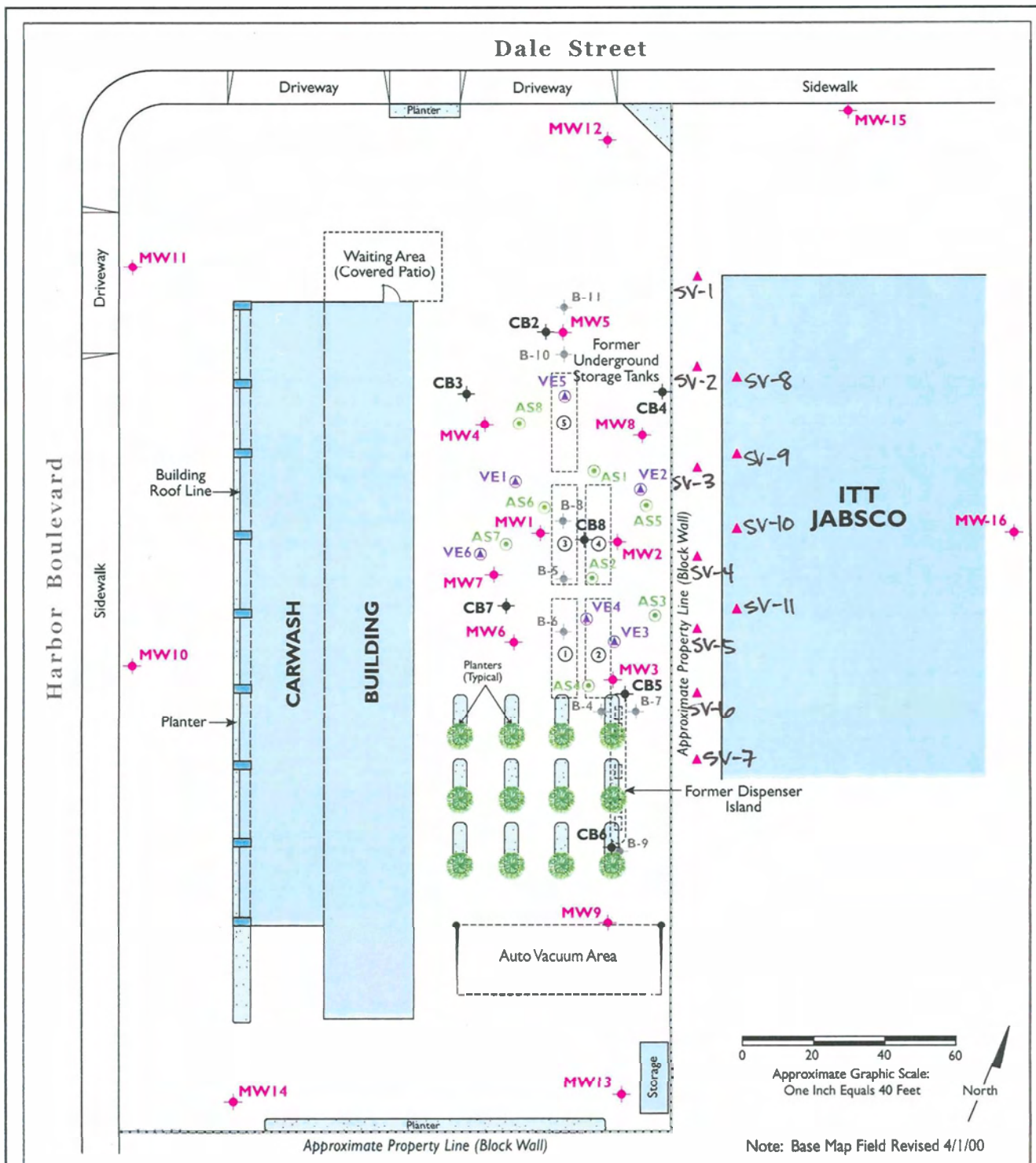
CJA **C. JAMES & ASSOCIATES, INC.**
Environmental Consultants

Client:
Fountain Valley Regional Hospital
17100 Euclid Street
Fountain Valley, California

SITE LOCATION MAP

Plate I

Drawn By: H.L. Approved By: H.H. Project Number: 01085 Date: February 2005



EXPLANATION

MW-14 ◆	Location and Designation of Monitoring Wells.	AS8 ⊙	Location and Designation of Air Sparge Wells.
B-11 ◆	Location and Designation of Soil Borings.	CB8 ◆	Location and Designation of Proposed Confirmation Soil Boring
VE6 ⊙	Location and Designation of Vapor Extraction Wells.	▲	Location and Designation of Proposed Soil Vapor Probe

Note: All locations are approximate.

CJA **C. JAMES & ASSOCIATES, INC.**
Environmental Consultants

Client:
METRO CARWASH
2950 Harbor Boulevard
Costa Mesa, California

SITE PLAN WITH PROPOSED SOIL VAPOR PROBE LOCATIONS

Plate 2

Drawn By: H.L. Approved By: H.H. Project Number: 01105 Date: February 2006

APPENDIX A

Analytical Methodology Quality Control Procedures

Analytical Methodology

The following analytical protocols fulfill both the CA-EPA advisory (2003) and LA-RWQCB soil gas analytical guidelines (1997).

Operating Conditions and Instrumentation

Volatile Organic Compounds (VOCs) by EPA 8260 or TO-14

Instrument: Hewlett-Packard 6890/5973 or 5890/5972 GCMS

Column: 60 meter HP-624, 0.32mm x 1.8u. capillary.

Carrier flow: Helium at 15 ml/min.

Detectors: Quadrupole MS, full scan mode

TO-14 Instrumentation: Entech Ait Concentrator

Fixed and Biogenic Gases (O₂, CO₂, & Methane)

Instrument: SRI 8610 or Carle AGC 311 Gas Chromatograph

Column: 6 foot CTR

Carrier flow: Helium at 15 ml/min.

Detectors: Thermoconductivity (TCD) for O₂ & CO₂.

Detectors: Flame ionization detector (FID) for methane.

Hydrogen Sulfide

Instrument: Jerome 631x

Detectors: Gold-film

Standard Preparation

Primary (stock) standards: Made from certified neat components or from traceable standards purchased from certified suppliers.

Secondary (working) Standards: Made by diluting primary standard. Typical concentrations are 1ug/ml, 10 ug/ml, and 50 ug/ml.

Laboratory Check Samples are prepared at the midpoint concentration from a standard purchased from a source different than the primary standards.

Lot numbers and preparations of all standards are recorded on a log sheet and kept in the mobile laboratory.

Initial Multi-Point Calibration Curve

An initial calibration curve of a minimum of 3 points is performed either:

- At the start of the project.
- When the GC column or operating conditions have changed
- When the daily mid-point calibration check cannot meet the requirements as specified below.

Calibration curves for each target component are prepared by analyzing low, mid, and high calibration standards covering the expected concentration range. The lowest standard concentration will not exceed 5 times the reporting limit for each compound. The amount of methanol is held constant for each calibration point.

A linearity check of the calibration curve for each compound is performed by computing a correlation coefficient and an average response factor. If a correlation coefficient of 0.990 or a percent relative standard deviation (%RSD) of $\pm 20\%$ is obtained, an average response factor is used over the entire calibration range. If the linearity criteria are not obtained, quantitation for that analyte is performed using a calibration curve.

After each initial multi-point calibration, the validity of the curve is further verified with a laboratory control standards (LCS) prepared at the mid-point of the calibration range. The LCS includes all target compounds and the response factor (RF) must fall within $\pm 20\%$ of the factor from the initial calibration curve.

Continuing Calibration (Daily Mid-point Calibration Check)

Continuing calibration standards prepared from a traceable source are analyzed at the beginning of each day. Acceptable continuing calibration agreement is set at $\pm 20\%$ to the average response factor from the calibration curve, except for freon, chloroethane, and vinyl chloride when a 25% agreement is required. When calibration checks fall outside this acceptable range for analytes detected on the site, corrective action, consisting of verification of the standard and/or a new calibration curve for the analytes out of specifications is performed by the on-site chemist.

The continuing calibration includes all compounds expected or detected at the site in addition to any specific compounds designated in the project workplan.

Detection Limits

Reporting limits for this program are defined as 5 times lower than the lowest concentration standard of the calibration curve, as follows:

Compound	Detector	Report Limit
VOCs	Mass Spec	0.1 to 1 ug/l-vapor
Methane	FID	10 ppmv
Fixed Gases	TCD	0.1% by vol
H ₂ S	Gold Film	0.10 ppmv

Injection of Soil Gas Samples

Vapor samples are withdrawn from the probe sampling syringe with a 1 to 20 cc syringe and injected with surrogates into a purge & trap instrument for VOC analysis. Separate aliquots are directly injected into gas chromatographs for fixed gases and methane analysis. The injection syringe is flushed 2 times with the sample prior to injection. Injection syringes are flushed several times with clean air or discarded between injections.

Laboratory Data Logs

The field chemist maintains injection and sample analysis records including date and time of analysis, sampler's name, chemist's name, sample ID number, concentrations of compounds detected, calibration data, and any unusual conditions.

Quality Control Procedures

Compliance With Standards

Sampling and analytical procedures complied with the American Society for Testing and Materials' *Standard Guide for Soil Gas Monitoring in the Vadose Zone* (ASTM D5314-93), the LA-RWQCB Soil Gas Guidelines (Feb 1997 version), and the San Diego County SAM Soil Gas Guidelines (October, 2001).

Sampling Quality Control

Method Blanks

Prior to sampling each day, all components of the sampling system are checked for contamination by drawing ambient air from above ground through the sampling equipment, and injecting a sample into a gas chromatograph. The analysis results are compared to that of the ambient air and recorded in the data tables as blanks.

Sample Quality Control

Each sample is given a unique identification number specifying location and depth. Purge and sample volumes are monitored closely using small calibrated syringes to assure a proper flow of soil gas. This ensures a representative sample is obtained from the sample zone without excessive pumping, which could result in sampling of surface air.

Decontamination Procedures

To minimize the potential for cross-contamination between sites, all external soil vapor probe parts are wiped or washed cleaned of excess dirt and moisture with solvents or de-ionized water as appropriate. The probe's internal nylaflow tubing is purged with clean air between sampling locations or replaced as necessary. Sampling syringes are flushed with clean air after each use or replaced.

Corrective Action

Corrective action is taken when unexpected contaminant levels are detected. First duplicate samples are taken to verify the initial detection of petroleum hydrocarbons. If contamination is suspected, then the sample probes are disassembled, wiped cleaned of excess dirt and moisture, rinsed with deionized water, washed with Alconox and water, and rinsed again with

deionized water. The sample tubing in the probe is replaced. Contaminated sampling syringes are discarded.

Analytical Quality Control

Method Blanks

Method blanks are performed at the start of each day by drawing clean air through the sampling equipment and analyzing. These blanks verify all components of the sampling and analytical system are free of contamination. Additional blanks are performed more often as appropriate depending upon the measured concentrations, at a minimum 1 every 20 samples. The results of all blank analyses are recorded in the data tables. If a blank shows a measurable amount of any target compound, the on-site chemist will investigate and determine the source, and resolve the contamination problem prior to analyzing any samples.

Duplicate Samples

Duplicate (repetitive) analysis of a sample is performed when inconsistent data are observed, but at least one every 20 samples. Because soil vapor duplicates can vary widely, nominal relative percent difference (RPD) acceptance criteria is \pm a factor of 2.

Continuing Calibration (Daily Mid-point Calibration Check)

AS described on page 5 of this document, continuing calibration standards prepared from a traceable source are analyzed at the beginning of each day.

The continuing calibration includes all compounds expected or detected at the site and any specific compounds designated in the project workplan.

Laboratory Check Samples (LCS)

Laboratory check samples, prepared at the midpoint concentration from a standard purchased from a source different than the calibration standards, are analyzed at the end of each day. Acceptance criteria is \pm 20% from the true value. If the LCS falls outside this acceptance range for analytes detected on site, corrective action, consisting of verification of the standard and/or a new calibration curve for the analytes out of specifications, is performed.

APPENDIX B

Laboratory Analyses



10 March 2006

Mr. Michael Anselmo
C. James & Associates, Inc
441 Calle Corazon
Oceanside, CA 92057
RE: CJ030306-L4

Enclosed are the results of analyses for samples received by the laboratory on 03-Mar-06 . If you have any questions concerning this report, please feel free to contact me.

Sincerely,


Tamara Davis
Laboratory Director

H&P Mobile Geochemistry operates under CA Environmental Lab Accreditation Program Numbers 1317, 1561, 1667, 1745, 1746, 1839, 2088, 2278, 2530, 2543, 2579 and 2595.

432 North Cedros Avenue, Solana Beach, California 92075 | 858 793.0401 — Fax 858 793.0404
148 South Vinewood Street, Escondido, California 92029 | 760 735.3208 — Fax 760 735.2469
3825 Industry Avenue, Lakewood, California 90712 | 562 426.6991 — Fax 562 426.6995
www.HandPmg.com | 1-800-834-9888



C. James & Associates, Inc
 441 Calle Corazon
 Oceanside CA, 92057

Project: CJ030306-L4
 Project Number: 01105, 2950 Harbor Blvd.
 Project Manager: Mr. Michael Anselmo

Reported:
 10-Mar-06

ANALYTICAL REPORT FOR SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
SG8-5 ,P22CC	E603012-01	Vapor	03-Mar-06	03-Mar-06
SG8-5 ,P66CC	E603012-02	Vapor	03-Mar-06	03-Mar-06
SG8-5 ,P154CC	E603012-03	Vapor	03-Mar-06	03-Mar-06
SG9-5 ,P66CC	E603012-04	Vapor	03-Mar-06	03-Mar-06
SG11-5 ,P66CC	E603012-05	Vapor	03-Mar-06	03-Mar-06
SG10-5 ,P66CC	E603012-06	Vapor	03-Mar-06	03-Mar-06
SG10-5Dup ,P126CC	E603012-07	Vapor	03-Mar-06	03-Mar-06

The sample run for SG10-5, P66CC ended prematurely due to instrument problems. Napthalene could not be reported from this run. Repairs were made on the instrument and one sample was run and two samples were rerun after the 4 hour holding time had expired. When applicable, both the first runs and the re-runs were reported.



C. James & Associates, Inc
441 Calle Corazon
Oceanside CA, 92057

Project: CJ030306-L4
Project Number: 01105, 2950 Harbor Blvd.
Project Manager: Mr. Michael Anselmo

Reported:
10-Mar-06

Volatile Organic Compounds by EPA Method 8260B

H&P Mobile Geochemistry

Analyte	Result	Reporting Limit	Units	Dilution Factor	Batch	Prepared	Analyzed	Method	Notes
SG8-5 ,P22CC (E603012-01) Vapor Sampled: 03-Mar-06 Received: 03-Mar-06									
1,1-Difluoroethane (LCC)	ND	10	ug/l	0.05	EC60301	03-Mar-06	03-Mar-06	EPA 8260B	
Methyl tert-butyl ether	ND	1.0	"	"	"	"	"	"	
Di-isopropyl ether	ND	1.0	"	"	"	"	"	"	
Ethyl tert-butyl ether	ND	1.0	"	"	"	"	"	"	
Tert-amyl methyl ether	ND	1.0	"	"	"	"	"	"	
Tert-butyl alcohol	ND	5.0	"	"	"	"	"	"	
Benzene	ND	1.0	"	"	"	"	"	"	
Toluene	ND	1.0	"	"	"	"	"	"	
Ethylbenzene	ND	1.0	"	"	"	"	"	"	
m,p-Xylene	ND	2.0	"	"	"	"	"	"	
o-Xylene	ND	1.0	"	"	"	"	"	"	
Naphthalene	ND	1.0	"	"	"	"	"	"	

Surrogate: Dibromofluoromethane

108 % 75-125

" " " "

Surrogate: 1,2-Dichloroethane-d4

113 % 75-125

" " " "

Surrogate: Toluene-d8

91.6 % 75-125

" " " "

SG8-5 ,P66CC (E603012-02) Vapor Sampled: 03-Mar-06 Received: 03-Mar-06

1,1-Difluoroethane (LCC)	ND	10	ug/l	0.05	EC60301	03-Mar-06	03-Mar-06	EPA 8260B	
Methyl tert-butyl ether	ND	1.0	"	"	"	"	"	"	
Di-isopropyl ether	ND	1.0	"	"	"	"	"	"	
Ethyl tert-butyl ether	ND	1.0	"	"	"	"	"	"	
Tert-amyl methyl ether	ND	1.0	"	"	"	"	"	"	
Tert-butyl alcohol	ND	5.0	"	"	"	"	"	"	
Benzene	ND	1.0	"	"	"	"	"	"	
Toluene	ND	1.0	"	"	"	"	"	"	
Ethylbenzene	ND	1.0	"	"	"	"	"	"	
m,p-Xylene	ND	2.0	"	"	"	"	"	"	
o-Xylene	ND	1.0	"	"	"	"	"	"	
Naphthalene	ND	1.0	"	"	"	"	"	"	

Surrogate: Dibromofluoromethane

106 % 75-125

" " " "

Surrogate: 1,2-Dichloroethane-d4

119 % 75-125

" " " "

Surrogate: Toluene-d8

90.0 % 75-125

" " " "



C. James & Associates, Inc
441 Calle Corazon
Oceanside CA, 92057

Project: CJ030306-L4
Project Number: 01105, 2950 Harbor Blvd.
Project Manager: Mr. Michael Anselmo

Reported:
10-Mar-06

Volatile Organic Compounds by EPA Method 8260B

H&P Mobile Geochemistry

Analyte	Result	Reporting Limit	Units	Dilution Factor	Batch	Prepared	Analyzed	Method	Notes
SG8-5 ,P154CC (E603012-03) Vapor Sampled: 03-Mar-06 Received: 03-Mar-06									
1,1-Difluoroethane (LCC)	ND	10	ug/l	0.05	EC60301	03-Mar-06	03-Mar-06	EPA 8260B	
Methyl tert-butyl ether	ND	1.0	"	"	"	"	"	"	
Di-isopropyl ether	ND	1.0	"	"	"	"	"	"	
Ethyl tert-butyl ether	ND	1.0	"	"	"	"	"	"	
Tert-amyl methyl ether	ND	1.0	"	"	"	"	"	"	
Tert-butyl alcohol	ND	5.0	"	"	"	"	"	"	
Benzene	ND	1.0	"	"	"	"	"	"	
Toluene	ND	1.0	"	"	"	"	"	"	
Ethylbenzene	ND	1.0	"	"	"	"	"	"	
m,p-Xylene	ND	2.0	"	"	"	"	"	"	
o-Xylene	ND	1.0	"	"	"	"	"	"	
Naphthalene	ND	1.0	"	"	"	"	"	"	
Surrogate: Dibromofluoromethane		109 %	75-125		"	"	"	"	
Surrogate: 1,2-Dichloroethane-d4		118 %	75-125		"	"	"	"	
Surrogate: Toluene-d8		91.6 %	75-125		"	"	"	"	
SG9-5 ,P66CC (E603012-04) Vapor Sampled: 03-Mar-06 Received: 03-Mar-06									
1,1-Difluoroethane (LCC)	ND	10	ug/l	0.05	EC60301	03-Mar-06	03-Mar-06	EPA 8260B	
Methyl tert-butyl ether	ND	1.0	"	"	"	"	"	"	
Di-isopropyl ether	ND	1.0	"	"	"	"	"	"	
Ethyl tert-butyl ether	ND	1.0	"	"	"	"	"	"	
Tert-amyl methyl ether	ND	1.0	"	"	"	"	"	"	
Tert-butyl alcohol	ND	5.0	"	"	"	"	"	"	
Benzene	ND	1.0	"	"	"	"	"	"	
Toluene	ND	1.0	"	"	"	"	"	"	
Ethylbenzene	ND	1.0	"	"	"	"	"	"	
m,p-Xylene	ND	2.0	"	"	"	"	"	"	
o-Xylene	ND	1.0	"	"	"	"	"	"	
Naphthalene	ND	1.0	"	"	"	"	"	"	
Surrogate: Dibromofluoromethane		113 %	75-125		"	"	"	"	
Surrogate: 1,2-Dichloroethane-d4		126 %	75-125		"	"	"	"	S-09
Surrogate: Toluene-d8		87.6 %	75-125		"	"	"	"	



C. James & Associates, Inc
441 Calle Corazon
Oceanside CA, 92057

Project: CJ030306-L4
Project Number: 01105, 2950 Harbor Blvd.
Project Manager: Mr. Michael Anselmo

Reported:
10-Mar-06

Volatile Organic Compounds by EPA Method 8260B

H&P Mobile Geochemistry

Analyte	Result	Reporting Limit	Units	Dilution Factor	Batch	Prepared	Analyzed	Method	Notes
SG9-5 ,P66CC (E603012-04RE1) Vapor Sampled: 03-Mar-06 Received: 03-Mar-06									A
1,1-Difluoroethane (LCC)	ND	10	ug/l	0.05	EC60301	03-Mar-06	03-Mar-06	EPA 8260B	
Methyl tert-butyl ether	ND	1.0	"	"	"	"	"	"	
Di-isopropyl ether	ND	1.0	"	"	"	"	"	"	
Ethyl tert-butyl ether	ND	1.0	"	"	"	"	"	"	
Tert-amyl methyl ether	ND	1.0	"	"	"	"	"	"	
Tert-butyl alcohol	ND	5.0	"	"	"	"	"	"	
Benzene	ND	1.0	"	"	"	"	"	"	
Toluene	ND	1.0	"	"	"	"	"	"	
Ethylbenzene	ND	1.0	"	"	"	"	"	"	
m,p-Xylene	ND	2.0	"	"	"	"	"	"	
o-Xylene	ND	1.0	"	"	"	"	"	"	
Naphthalene	ND	1.0	"	"	"	"	"	"	

Surrogate: Dibromofluoromethane

87.6 % 75-125

" " " "

Surrogate: 1,2-Dichloroethane-d4

84.4 % 75-125

" " " "

Surrogate: Toluene-d8

98.8 % 75-125

" " " "

SG11-5 ,P66CC (E603012-05) Vapor Sampled: 03-Mar-06 Received: 03-Mar-06

1,1-Difluoroethane (LCC)	ND	10	ug/l	0.05	EC60301	03-Mar-06	03-Mar-06	EPA 8260B	
Methyl tert-butyl ether	ND	1.0	"	"	"	"	"	"	
Di-isopropyl ether	ND	1.0	"	"	"	"	"	"	
Ethyl tert-butyl ether	ND	1.0	"	"	"	"	"	"	
Tert-amyl methyl ether	ND	1.0	"	"	"	"	"	"	
Tert-butyl alcohol	ND	5.0	"	"	"	"	"	"	
Benzene	ND	1.0	"	"	"	"	"	"	
Toluene	ND	1.0	"	"	"	"	"	"	
Ethylbenzene	ND	1.0	"	"	"	"	"	"	
m,p-Xylene	ND	2.0	"	"	"	"	"	"	
o-Xylene	ND	1.0	"	"	"	"	"	"	
Naphthalene	ND	1.0	"	"	"	"	"	"	

Surrogate: Dibromofluoromethane

108 % 75-125

" " " "

Surrogate: 1,2-Dichloroethane-d4

120 % 75-125

" " " "

Surrogate: Toluene-d8

91.2 % 75-125

" " " "



C. James & Associates, Inc
441 Calle Corazon
Oceanside CA, 92057

Project: CJ030306-L4
Project Number: 01105, 2950 Harbor Blvd.
Project Manager: Mr. Michael Anselmo

Reported:
10-Mar-06

Volatile Organic Compounds by EPA Method 8260B

H&P Mobile Geochemistry

Analyte	Result	Reporting Limit	Units	Dilution Factor	Batch	Prepared	Analyzed	Method	Notes
SG10-5,P66CC (E603012-06) Vapor Sampled: 03-Mar-06 Received: 03-Mar-06									
1,1-Difluoroethane (LCC)	ND	10	ug/l	0.05	EC60301	03-Mar-06	03-Mar-06	EPA 8260B	
Methyl tert-butyl ether	ND	1.0	"	"	"	"	"	"	
Di-isopropyl ether	ND	1.0	"	"	"	"	"	"	
Ethyl tert-butyl ether	ND	1.0	"	"	"	"	"	"	
Tert-amyl methyl ether	ND	1.0	"	"	"	"	"	"	
Tert-butyl alcohol	ND	5.0	"	"	"	"	"	"	
Benzene	ND	1.0	"	"	"	"	"	"	
Toluene	ND	1.0	"	"	"	"	"	"	
Ethylbenzene	ND	1.0	"	"	"	"	"	"	
m,p-Xylene	ND	2.0	"	"	"	"	"	"	
o-Xylene	ND	1.0	"	"	"	"	"	"	
Surrogate: Dibromofluoromethane		101 %	75-125	"					
Surrogate: 1,2-Dichloroethane-d4		110 %	75-125	"					
Surrogate: Toluene-d8		81.2 %	75-125	"					
SG10-5,P66CC (E603012-06RE1) Vapor Sampled: 03-Mar-06 Received: 03-Mar-06									
1,1-Difluoroethane (LCC)	ND	10	ug/l	0.05	EC60301	03-Mar-06	03-Mar-06	EPA 8260B	A
Methyl tert-butyl ether	ND	1.0	"	"	"	"	"	"	
Di-isopropyl ether	ND	1.0	"	"	"	"	"	"	
Ethyl tert-butyl ether	ND	1.0	"	"	"	"	"	"	
Tert-amyl methyl ether	ND	1.0	"	"	"	"	"	"	
Tert-butyl alcohol	ND	5.0	"	"	"	"	"	"	
Benzene	ND	1.0	"	"	"	"	"	"	
Toluene	ND	1.0	"	"	"	"	"	"	
Ethylbenzene	ND	1.0	"	"	"	"	"	"	
m,p-Xylene	ND	2.0	"	"	"	"	"	"	
o-Xylene	ND	1.0	"	"	"	"	"	"	
Naphthalene	ND	1.0	"	"	"	"	"	"	
Surrogate: Dibromofluoromethane		90.4 %	75-125	"		"			
Surrogate: 1,2-Dichloroethane-d4		84.8 %	75-125	"		"			
Surrogate: Toluene-d8		105 %	75-125	"		"			



C. James & Associates, Inc
441 Calle Corazon
Oceanside CA, 92057

Project: CJ030306-L4
Project Number: 01105, 2950 Harbor Blvd.
Project Manager: Mr. Michael Anselmo

Reported:
10-Mar-06

Volatile Organic Compounds by EPA Method 8260B

H&P Mobile Geochemistry

Analyte	Result	Reporting Limit	Units	Dilution Factor	Batch	Prepared	Analyzed	Method	Notes
SG10-5Dup ,P126CC (E603012-07) Vapor Sampled: 03-Mar-06 Received: 03-Mar-06									A
1,1-Difluoroethane (LCC)	ND	10	ug/l	0.05	EC60301	03-Mar-06	03-Mar-06	EPA 8260B	
Methyl tert-butyl ether	ND	1.0	"	"	"	"	"	"	
Di-isopropyl ether	ND	1.0	"	"	"	"	"	"	
Ethyl tert-butyl ether	ND	1.0	"	"	"	"	"	"	
Tert-amyl methyl ether	ND	1.0	"	"	"	"	"	"	
Tert-butyl alcohol	ND	5.0	"	"	"	"	"	"	
Benzene	ND	1.0	"	"	"	"	"	"	
Toluene	ND	1.0	"	"	"	"	"	"	
Ethylbenzene	ND	1.0	"	"	"	"	"	"	
m,p-Xylene	ND	2.0	"	"	"	"	"	"	
o-Xylene	ND	1.0	"	"	"	"	"	"	
Naphthalene	ND	1.0	"	"	"	"	"	"	
Surrogate: Dibromofluoromethane		92.0 %	75-125		"		"	"	
Surrogate: 1,2-Dichloroethane-d4		91.6 %	75-125		"		"	"	
Surrogate: Toluene-d8		103 %	75-125		"		"	"	



C. James & Associates, Inc
441 Calle Corazon
Oceanside CA, 92057

Project: CJ030306-L4
Project Number: 01105, 2950 Harbor Blvd.
Project Manager: Mr. Michael Anselmo

Reported:
10-Mar-06

TPH by MS

H&P Mobile Geochemistry

Analyte	Result	Reporting Limit	Units	Dilution Factor	Batch	Prepared	Analyzed	Method	Notes
SG8-5 ,P22CC (E603012-01) Vapor Sampled: 03-Mar-06 Received: 03-Mar-06									
Gasoline (C5-C11)	ND	500	ug/l	0.05	EC60301	03-Mar-06	03-Mar-06	DHS LUFT/8260B	
SG8-5 ,P66CC (E603012-02) Vapor Sampled: 03-Mar-06 Received: 03-Mar-06									
Gasoline (C5-C11)	ND	500	ug/l	0.05	EC60301	03-Mar-06	03-Mar-06	DHS LUFT/8260B	
SG8-5 ,P154CC (E603012-03) Vapor Sampled: 03-Mar-06 Received: 03-Mar-06									
Gasoline (C5-C11)	ND	500	ug/l	0.05	EC60301	03-Mar-06	03-Mar-06	DHS LUFT/8260B	
SG9-5 ,P66CC (E603012-04) Vapor Sampled: 03-Mar-06 Received: 03-Mar-06									
Gasoline (C5-C11)	ND	500	ug/l	0.05	EC60301	03-Mar-06	03-Mar-06	DHS LUFT/8260B	
SG9-5 ,P66CC (E603012-04RE1) Vapor Sampled: 03-Mar-06 Received: 03-Mar-06									
Gasoline (C5-C11)	ND	500	ug/l	0.05	EC60301	03-Mar-06	03-Mar-06	DHS LUFT/8260B	A
SG11-5 ,P66CC (E603012-05) Vapor Sampled: 03-Mar-06 Received: 03-Mar-06									
Gasoline (C5-C11)	ND	500	ug/l	0.05	EC60301	03-Mar-06	03-Mar-06	DHS LUFT/8260B	
SG10-5 ,P66CC (E603012-06) Vapor Sampled: 03-Mar-06 Received: 03-Mar-06									
Gasoline (C5-C11)	ND	500	ug/l	0.05	EC60301	03-Mar-06	03-Mar-06	DHS LUFT/8260B	
SG10-5 ,P66CC (E603012-06RE1) Vapor Sampled: 03-Mar-06 Received: 03-Mar-06									
Gasoline (C5-C11)	ND	500	ug/l	0.05	EC60301	03-Mar-06	03-Mar-06	DHS LUFT/8260B	A
SG10-5Dup ,P126CC (E603012-07) Vapor Sampled: 03-Mar-06 Received: 03-Mar-06									
Gasoline (C5-C11)	ND	500	ug/l	0.05	EC60301	03-Mar-06	03-Mar-06	DHS LUFT/8260B	A



C. James & Associates, Inc
441 Calle Corazon
Oceanside CA, 92057

Project: CJ030306-L4
Project Number: 01105, 2950 Harbor Blvd.
Project Manager: Mr. Michael Anselmo

Reported:
10-Mar-06

Volatile Organic Compounds by EPA Method 8260B - Quality Control
H&P Mobile Geochemistry

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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Batch EC60301 - EPA 5030

Blank (EC60301-BLK1)

Prepared & Analyzed: 03-Mar-06

Methyl tert-butyl ether	ND	1.0	ug/l
Di-isopropyl ether	ND	1.0	"
1,1-Difluoroethane (LCC)	ND	10	"
Ethyl tert-butyl ether	ND	1.0	"
Tert-amyl methyl ether	ND	1.0	"
Tert-butyl alcohol	ND	5.0	"
Benzene	ND	1.0	"
Toluene	ND	1.0	"
Ethylbenzene	ND	1.0	"
m,p-Xylene	ND	2.0	"
o-Xylene	ND	1.0	"
Naphthalene	ND	1.0	"

Surrogate: Dibromofluoromethane	2.59	"	2.50	104	75-125
Surrogate: 1,2-Dichloroethane-d4	2.66	"	2.50	106	75-125
Surrogate: Toluene-d8	2.14	"	2.50	85.6	75-125



C. James & Associates, Inc
441 Calle Corazon
Oceanside CA, 92057

Project: CJ030306-L4
Project Number: 01105, 2950 Harbor Blvd.
Project Manager: Mr. Michael Anselmo

Reported:
10-Mar-06

TPH by MS - Quality Control
H&P Mobile Geochemistry

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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Batch EC60301 - EPA 5030

Blank (EC60301-BLK1)
Gasoline (C5-C11)

Prepared & Analyzed: 03-Mar-06

ND 500 ug/l



C. James & Associates, Inc
441 Calle Corazon
Oceanside CA, 92057

Project: CJ030306-L4
Project Number: 01105, 2950 Harbor Blvd.
Project Manager: Mr. Michael Anselmo

Reported:
10-Mar-06

Notes and Definitions

S-09 Surrogate recovery is outside of established control limits. Corrective action was taken.

A Due to instrument repairs, sample was analyzed outside of the 4 hour holding time.

DET Analyte DETECTED

ND Analyte NOT DETECTED at or above the reporting limit

NR Not Reported

dry Sample results reported on a dry weight basis

RPD Relative Percent Difference